

CLAIMS

1. A method of enhancing CD28 mediated and dependent T-cell responses against viral, bacterial, fungal or prion infections in a mammalian subject
5 comprising administering a drug to said subject, wherein said drug enhances or prolongs GSK-3 α or β inactivation.
2. A medicament for enhancing CD28 mediated and dependent T-cell responses against infections in a mammalian subject, wherein the medicament comprises a
10 drug which enhances or prolongs GSK-3 α or β inactivation.
3. A method of enhancing CD28 mediated and dependent T-cell responses against infections comprising administering a drug to isolated peripheral T-cells or blood of a mammalian subject, wherein said drug enhances or prolongs GSK-3 α or
15 β inactivation, for example CD28-mediated GSK-3 α or β inactivation.
4. A medicament for enhancing CD28 mediated and dependent T-cell responses against infections in a mammalian subject, wherein the medicament comprises a drug and is for administering to isolated peripheral T-cells or blood of said
20 subject, wherein said drug enhances or prolongs GSK-3 α or β inactivation, for example CD28-mediated GSK-3 α or β inactivation.
5. The method of claim 1 or 3, wherein the drug is a peptide.
- 25 6. The medicament of claim 2 or 4 wherein the drug is a peptide.
7. The method of claim 1 or 3, wherein the said drug is SB415286 from GlaxoSmithKline, or a related GSK-3 inhibitory compound such as a 3-indolyl-4-phenyl-1H-pyrrole-2,5-dione derivative or novel pyridine or pyrimidine derivative
30 from another company, or wherein the said drug is lithium chloride or a related compound.
8. The medicament of claim 2 or 4, wherein the said drug is SB415286 from GlaxoSmithKline, or a related GSK-3 inhibitory compound such as a 3-indolyl-4-

phenyl-1H-pyrrole-2,5-dione derivative or novel pyridine or pyrimidine derivative from another company, or wherein the said drug is lithium chloride or a related compound.

5 9. The method of claim 1 or claim 3, wherein the drug can provide a CD28-substitute signal, or act in conjunction with reagents (i.e. anti-CD28; CD80/CD86) that ligate CD28.

10. The method of claim 1 or claim 3 leading to enhanced cytokine production.

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11. The method of claim 1 or claim 3 leading to increased T-cell proliferation and clonal expansion.

12. The method of claim 1 or claim 3 leading to increased cytotoxic T-cell expansion and function.

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13. A method for screening or identifying a compound useful in treating infections, comprising identifying inhibitory and stimulatory compounds capable of modulating CD28 inactivation of GSK-3.

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14. The method according to claim 1 or claim 3, further comprising administering an agent to said subject, wherein said agent is capable of ligating CD28 to peripheral blood lymphocytes and/or T-cell in said subject.

25 15. The method according to claim 1 or claim 3 for expanding lymphoid cells that could be grown from tissues infected with a pathogen such as a virus, bacterial, fungi or prion, otherwise known as tissue-infiltrating lymphocytes.

16. A medicament comprising a reagent (for example anti-CD28; CD80/CD86)
30 that ligates CD28 for enhancing CD28 mediated and dependent T-cell responses against infections in a mammalian subject, wherein the subject is a subject administered a non-peptide drug (either directly or via administration of the drug to isolated peripheral T-cells or blood of said subject) which enhances or prolongs

GSK-3 α or β inactivation, for example CD28-mediated GSK-3 α or β inactivation.

17. A medicament comprising a reagent (for example anti-CD28; CD80/CD86)
5 that ligates CD28 for enhancing CD28 mediated and dependent T-cell responses.
against infections in a mammalian subject, wherein the medicament is for
administering to isolated peripheral T-cells or blood of said subject and wherein a
drug which enhances or prolongs GSK-3 α or β inactivation, for example CD28-
mediated GSK-3 α or β inactivation is administered to the isolated peripheral T-
10 cells or blood of said subject or directly to the subject.

18. A medicament for treating infections, for example a infection as indicated
above, comprising a composition or kit of parts comprising a GSK3 inhibitor
and a reagent that ligates CD28.